



Ricin

Information for the Public

What is ricin?

Ricin is a potent toxin derived from beans of the castor plant. The naturally occurring toxin is fairly easily removed from the bean pulp waste, which remains after castor oil extraction. Ricin can be in the form of a powder, pellet, liquid, or an aerosol for intentional dispersal.

Has ricin poisoning ever occurred?

Poisoning can occur if ricin is inhaled, swallowed, or injected. Ricin poisoning has followed accidental ingestion of castor beans, has occurred in suicide attempts, and has been used in acts of terrorism and assassination. There have been several cases of ricin possession in recent years, both in the United States and in other countries.

How likely is it that ricin could be used as a terrorism agent?

Although ricin is relatively easy to extract from the waste left over from castor oil production, it is difficult to process into a size that could poison large numbers of people by inhalation. Adverse health effects from ricin could occur from eating contaminated food or water, but ricin is not absorbed well this way. It is also not easily absorbed by intact skin. However, one of the earliest intentional poisonings involved injection of a metal pellet containing ricin through the skin.

In the unlikely event that ricin exposure is suspected, the Michigan Department of Community Health (MDCH) laboratory can coordinate analysis of environmental samples, following approval by the Federal Bureau of Investigations (FBI).

How can I be exposed?

Ricin can be inhaled in a mist, aerosol, or powder form. When ricin is in a powder or pellet form, it can get into food or water and be swallowed. Ricin dissolved in a liquid could also be placed in food and water. Ricin, like many plant and animal toxins, generally cannot be absorbed through intact skin.

Ricin poisoning cannot be spread from person to person through casual contact; however, it is possible that a person whose clothing is contaminated could expose others in a confined space (like an ambulance).

What are the symptoms of ricin poisoning?

Symptoms of ricin poisoning depend on the dose received and route of exposure. Inhaled ricin is much more toxic than exposure through other routes. Symptoms usually begin within six hours of ingestion exposure and within eight hours of inhalation exposure.

- Inhaling ricin initially causes flu-like symptoms such as cough, fever, nausea, tightness in the chest, and difficult breathing. It can result in death from respiratory and circulatory failure.
- Exposure by eating contaminated food and/or water initially causes profuse vomiting and possibly bloody diarrhea. Fever and abdominal pain could occur later. Ricin poisoning can result in death from multiple organ failure.
- Exposure by injection causes localized death of muscle tissue and lymph nodes. It can result in death from multiple organ failure.

How is ricin poisoning diagnosed and treated?

The diagnosis of ricin poisoning is largely based on symptoms and should be suspected in a setting of mass casualties with a similar and appropriate clinical picture. Health care providers should contact their local health department immediately if they suspect a patient has been exposed.

There are no antidotes or vaccines currently available. Hospital care is necessary to support the victim and treat the effects of the toxin. No widely available and reliable test exists to confirm individual exposure.

What should I do if I am exposed to ricin?

If exposed to ricin, move to an area of fresh air. If indoors, leave the building. If outdoors, move upwind (i.e., walk with the wind in your face) and away from the area of release.

If you think you have been exposed, remove clothing (taking care to avoid skin contact with contaminated clothing) and rapidly wash your entire body with soap and water. Seek medical care immediately. Clothing (and any other object that came into contact with the contaminated clothing) should be placed inside a plastic bag, taking care to avoid skin contact with contaminated clothing. Seal this bag, place it inside another plastic bag, and alert your local health department to its location so they can be handled appropriately.

For more information on ricin:

- Contact your local public health department. Check <http://www.malphp.org/page.cfm/108/> for your jurisdiction. A list of local public health departments is also available at http://www.michigan.gov/documents/June2003LHDLList_69658_7.pdf
- Visit the Michigan Department of Community Health Office of Public Health Preparedness website <http://www.michigan.gov/ophp>
- Call the Michigan Department of Community Health Toxics and Health Hotline: (1-800-648-6942)
- Visit The Centers for Disease Control and Prevention (CDC) website <http://www.bt.cdc.gov/agent/ricin/index.asp>
- Call the Centers for Disease Control and Prevention Public Response Service Hotline:
English: 1-888-246-2675
Español: 1-888-246-2857
TTY: 1-866-874-2646
- Call the Agency for Toxic Substances and Disease Registry: (1-888-422-8737)
- **For immediate assistance, call the Poison Control Center hotline: 1-800-222-1222**